UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,209	02/13/2004	Hirofumi Tamai	14617	2478

293 7590 09/09/2005

Ralph A. Dowell of DOWELL & DOWELL P.C.
2111 Eisenhower Ave.
Suite 406
Alexandria, VA 22314

EXAMINER	
PRESTON, ERIK D	

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/777,209	TAMAI, HIROFUMI	
	Examiner	Art Unit	
	Erik D. Preston	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-29 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) 8-14,25 and 26 is/are allowed.

6)☒ Claim(s) 1-7,15-24 and 27-29 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 07/12/2004.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 8 & 25 are objected to because of the following informalities: In the 17th line of page 16, and the 12th line of page 19, the phrase "...electrical conductors..." should be changed to "...additional electrical conductors..." for the sake of clarification. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7,15-24 & 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chitayat (US 4761573 supplied by applicant) in view of Moritz et al. (US 5773941 supplied by applicant) in view of Langley (US 4369383 supplied by applicant) in view of Freeman et al. (US 2003/0083685).

With respect to claims 1,15,22,23,27 & 28, Chitayat teaches a stationary stator (Fig. 9, #132); a movable stage (Fig. 9, #14) and a controller (Fig. 2, #21) adapted to energize coils to position the movable stage over the stator in response to control signals (Abstract); a sensor (Fig. 2, #16); and, a frame (Fig. 9, #12) having first and second linear guides (Fig. 1, #16 & 16') for slideably mounting the stage over the stator wherein each linear guide has a stage portion attached to the stage, wherein the stage is connected to a conductor (Fig. 9, #118 & 120) through a first electrical insulator (Fig.

9, #112), a frame portion (Fig. 9, #128 & 130) attached to the frame through a second electrical insulator (since the conductors are formed on a printed circuit board (Col. 6, Lines 37-45), a plurality of bearings disposed between the stage and frame portions (such as the type that are seen in Fig. 6), a spring mounted brush mounted on the stage portion (Fig. 9, #116) coupling the brush to the controller (which it must inherently do since the controller controls the movement of the motor) for providing electrical power from an external power supply (Fig. 2, #32) to the movable stage through the frame portion of the motor, but it does not teach said stator having magnets, said movable stage having coils, said controller having a transceiver for wirelessly communicating with an external data processing system, the linear guides being electrically conductive, or a plurality of ball bearings disposed between and electrically coupling the stage and frame portions. However, Moritz teaches a stator having magnets (Fig. 3, #50), a movable stage having coils (Fig. 3, #46), a controller (Fig. 3, #14) having a transceiver for wirelessly communicating with an external data processing system (which is inherently connected to Fig. 2, #64); Langley teaches that linear guides (Fig. 4, #20 & 18) can be made to be electrically conductive so as to supply power to a linear motor stage (Fig. 1, #12); and Freeman teaches that spring-loaded conductive ball bearings can be used as brushes in a system involving a linear motor (Paragraph 353). It would have been obvious to one of ordinary skill in the art at the time of the invention to: Modify the movable stage of Chitayat in view of the movable stage as taught by Moritz because it reduces the number of wires needed for linear motor applications (Moritz, Col. 1, Line 46-Col. 2, Line 9); to modify the linear guides of Chitayat in view of the

Line 9); to modify the linear guides of Chitayat in view of the linear guides as taught by Langley because it is precise and has a rapid response time (Langley, Col. 2, Lines 45-54) while requiring less components and being more compact than the motor of Chitayat.; and to modify the brushes of Langley in view of the spring-loaded conductive ball bearings of Freeman as merely a substitution of well known equivalent contact brushes.

With respect to claims 2 & 16, Chitayat in view of Moritz in view of Langley in view of Freeman, teaches the linear motor of claims 1 & 15, and Chitayat teaches that the stator is incorporated in the frame (as is seen in Fig. 6).

With respect to claims 3 & 17, Chitayat in view of Moritz in view of Langley in view of Freeman, teaches the linear motor of claims 1 & 15, and Langley teaches that a recess is defined in the stage portion (as seen in Figs 1 & 2, the wheels (#32) of the stage have a recessed portion at an inner periphery) for receiving the frame portion.

With respect to claims 4 & 18, Chitayat in view of Moritz in view of Langley in view of Freeman, teaches the linear motor of claims 1 & 15, Chitayat teaches position sensors coupled to the controller for providing position signals for the stage for generating the control signals (Abstract).

With respect to claims 5,6,19 & 20, Chitayat in view of Moritz in view of Langley in view of Freeman, teaches the linear motor of claims 1 & 15, and Moritz teaches Hall sensors (Col. 3, Line 42-Col. 4, Line 2) mounted on the stage and coupled to the controller for providing magnetic pole signals indicative of the location of the stage relative to the permanent magnets of the stator.

With respect to claims 7,21,24 & 29, Chitayat in view of Moritz in view of Langley in view of Freeman, teaches the linear motor of claims 1,15,23 & 27, and Moritz teaches a battery (Fig. 3, #18) mounted on the stage and coupled to the controller for delivering supplemental power to the controller.

Allowable Subject Matter

Claims 8-14,25 & 26 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: Claims 8 & 25 are allowable because while prior art does teach all of the other mater included in the claims, it does not teach electric conductors coupling the frame coil to an external power supply for generating a magnetic flux in the frame portion, and additional electric conductors coupling the stage coil to the controller for providing electrical power induced in the stage coil by the magnetic flux.

Claims 9-14 & 26 are dependent on the above claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6333628, US 6441515, US 6508591 & US 6712512.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik D. Preston whose telephone number is 571-272-8393. The examiner can normally be reached on Monday through Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

08/29/2005

DARREN SCHUBERG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800